**Topic 5: Stoichiometry, pH, &Gases**

Joke: What did Avogadro put in his hot chocolate?

-March-mole-ows!

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**A. Concept Terms (10)**

**Part 1: Moles/Rxs Stoic** **Part 2: pH**  **Part 3: Gases**

1. mole 1. molarity 1. STP
2. percent yield 2. acid 2. Kinetic Theory of Gases
3. theoretical yield 3. base 3. Boyle’s Law

4. equilibrium 4. pH 4. Charles’ Law

5. pH scale 5. Gay Lussac’s Law

6. titration 6. Ideal Gas Law

7. Avogadro’s Law

8. Dalton’s Law of Partial Pressure

**B. Notes and I will statements…(30)**

**Part 1:**

1. Choose the correct conversion factors to convert between moles, mass, and particles of a substance. (review) Draw the “stepping stone chart” and explain.
2. **Predict/Calculate** the amount of a substance produced or needed when given a chemical quantity. (use reaction stoichiometry to find the number of grams or moles needed of a substance from grams or moles of another substance in a balanced chemical reaction.)
3. **Calculate** the percent yield of a specific compound from a reaction.
4. **Explain** how a shift in equilibrium occurs when stresses such as temperature, the addition of reactants or products, and volume/pressure is applied to a system.

**Part 2:**

1. List several **properties** for acids and bases.
2. Identify a solution as being acidic or basic using **the pH scale**/chemical formula.
3. **Calculate the pH and pOH** of a solution given the hydroxide/hydronium ion concentration.
4. **Determine the concentration** of an unknown solution with a titration.

**Part 3:**

1. Identify when a gas is at **STP**.
2. Identify characteristics of **an ideal gas**.
3. **Solve for pressure, volume, temperature, or moles** of a substance using various gas laws. (Charles, Boyle, Gay Lussac, Ideal Gas, Avogadro, Dalton’s Law)
4. Find volume using the **ideal Gas law and stoichiometry**. (Solve for volume of a substance instead of grams or moles like in regular stoichiometry.)

**C. Interactive Notebook: Points (10)**

Part 1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Part 2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Part 3:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**D. Worksheet Completed: (20)**

Part 1:\_\_\_\_\_\_\_\_\_\_\_\_\_(pgs 1-5)

Part 2:\_\_\_\_\_\_\_\_\_\_\_\_\_(pgs 6-8)

Part 3:\_\_\_\_\_\_\_\_\_\_\_\_\_(pgs 9-11)

**E. Mini Test: (30)**

Part 1:\_\_\_\_\_\_\_\_

Part 2:\_\_\_\_\_\_\_\_

Part 3:\_\_\_\_\_\_\_\_

**\*Points for Unit 5.1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+**

**\*Points for Unit 5.2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**+**

**\*Points for Unit 5.3:\_\_\_\_\_\_\_\_\_\_\_\_\_\_(60%)**

**\*Final Unit 5 Test:\_\_\_\_\_\_\_\_\_\_\_\_\_\_(20%)**

**\*Days Absence as of today\_\_\_\_\_\_\_: Participation grade:\_\_\_\_\_\_(15%)**

**\*Lab grade:\_\_\_\_\_\_\_\_\_\_(5%)**

**Overall Grade: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_**